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DEFENSE INTELLIGENCE AGENCY
WASHINGTON, D.C. 20301

14 November 1969

SUBJECT: Worldwide Positioning Requirements

MC4G file

TO: COMIREX MC&G Working Group Members

1. Enclosed are the proposed draft paper and cover letter on above subject as discussed in detail on 10 November 1969.

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2. MCGWG members are requested to please indicate your coordination of the attached drafts by telephonic communication to [redacted] telephone number: [redacted] by Thursday, 20 November 1969.

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2 Enclosures a/s

Chairman
COMIREX MC&G Working Group

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NRO Review Completed.

DIA review completed.

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MEMORANDUM FOR CHAIRMAN, COMIREX

SUBJECT: Worldwide Positioning Requirements

1. Attached as enclosure 1 is a draft memo for USIB, subject as above, forwarded for appropriate action by COMIREX. Attached draft has the concurrence of the members of the COMIREX MCGWG, and MCGWG members will recommend concurrence to pertinent COMIREX members.

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2. The question of the need for the accelerometer on the [redacted] has been the principal problem holding up action on this paper for the past several weeks. In attached draft, the MCGWG indicates that the accelerometer cannot be justified in support of worldwide positioning.

3. In the process of evaluating the potential benefits of the accelerometer to MC&G, other needs for atmospheric drag data and associated collection programs were identified which may be considered in light of the potential benefit of including the accelerometer on these [redacted] DIA is making information concerning these other needs available to DoD COMIREX members for consideration as appropriate.

1 Enclosure a/s

[redacted] COLONEL, USA
Chairman
COMIREX MC&G Working Group

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MEMORANDUM FOR: United States Intelligence Board

SUBJECT: Worldwide Positioning Requirements

REFERENCES: a. USIB-D-41.14/295 (COMOR-D-13/65),
11 July 1966

b. USIB-D-46.4/24 (COMIREX-D-15.2/12),
29 October 1968, Limited Distribution

Memorandum for Holders of USIB-D-46.4/24,
20 November 1968, Limited Distribution

Background

1. Reference a. stated the DoD worldwide positioning requirements of 450 feet horizontal and 300 feet vertical 90 percent assurance relative to the World Geodetic System in support of long-range missiles. To meet this continuing requirement with an initial operating capability date of June 1970, reference b. established USIB agreement that NRO add the Doppler Beacon to five KH-4B systems beginning in the Summer of 1969, add the Doppler Beacon and accelerometer [redacted] with the same operational readiness as the 12" SI camera, and accomplish these steps without impact on the development and scheduling of the 12" SI system [redacted]

2. Further COMIREX reviews in January - March 1969 with regard to the urgency of the requirement, and NRO problems of initiating the Doppler Beacon collection in Summer of 1969, resulted in scheduling four Doppler Beacon KH-4B missions beginning in March 1970 instead of five missions beginning in Summer 1969. NRO now indicates that for an [redacted]

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additional cost of [] for Doppler Beacons and antennae, all six remaining KH-4B DISIC (3" frame camera) missions could be operated with the Doppler Beacon on a satisfactory schedule starting in Feb 70 instead of the four presently established. An increase of two KH-4B Doppler missions properly scheduled would have the advantage to DoD of positioning a significant number of additional Priority I targets in line with the 450 feet horizontal and 300 feet vertical requirement, increasing the positioning accuracy of other targets, and providing needed geodetic control for stereophotogrammetric mapping operations being conducted worldwide in advance of the required [] Even though 25X1 DISIC photography with Doppler Beacon might be partially cloud covered, photogrammetric control can be established through use of the more precise orbit. This permits control to be transferred to other cloud free photography. The advantages to DoD far outweigh the [] cost 25X1 involved.

3. Since requirements for target positioning and geodetic control for mapping and charting include Northern latitude areas having limited light in winter months, some of the KH-4B DISIC missions with Doppler Beacon should be operated during summer months.

4. The Department of Defense has indicated a tightening of the worldwide positioning objective for long-range missiles. Extensive research and development has been performed on a continuous basis to advance the capability of weapons systems. Major attention has been given to long-range missiles and supporting activities including those

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contributing to reducing the geodetic and geophysical error operations. Factors of long lead time for acquisition and data reduction and potential benefit in missile effectiveness in view of the cost involved are the basis for the DoD establishing a technical objective of reducing the positioning portions of the geodetic and geophysical components of missile operations from 450 feet horizontal and 300 feet vertical to 210 feet horizontal and 150 feet vertical by 1974. (All values 90 percent assurance relative the World Geodetic System).

5. The KH-4 DISIC with Doppler Beacon will meet the 450 feet horizontal and 300 feet vertical positioning requirement and will almost meet the technical objective of 210 feet horizontal, under optimum conditions, [redacted] but not the 150 feet vertical. In this regard, recent studies indicate that the accelerometer presently approved for the [redacted] cannot be justified in support of worldwide positioning.

6. According to the NRO, the Doppler Beacon can be added to the KH-4B, [redacted] without any adverse effect on intelligence collection activities.

Recommendations

7. It is recommended that:

a. USIB note the updated DoD worldwide positioning requirement in support of long range missiles as 450 feet horizontal and 300 feet vertical beginning in June 1970 (reapproved in reference b) and a technical objective of 210 feet horizontal and 150 feet vertical by 1974, all values 90 percent assurance relative the World Geodetic System.

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b. In view of the benefits to be gained and the relatively low cost involved, advise the NRO that there is no objection to meeting DoD worldwide positioning requirements as follows:

- (1) Add the Doppler Beacon to six KH-4B DISIC (3" frame camera) systems beginning in March 1970. (Instead of the five systems approved in reference b.)

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